**Catalogue of American Amphibians and Reptiles.**

WEBB, ROBERT G. 1973. *Trionyx muticus.*

## *Trionyx muticus* Lesueur
## Smooth softshell turtle

*Trionyx muticus* Lesueur, 1827:263. Type-locality, "Newharmony, sur le Wabash" [Wabash River, New Harmony, Posey County, Indiana]. Lectotype, Mus. Hist. Nat. Paris 8813 (formerly No. 787), dried carapace and plastron, obtained by Charles A. Lesueur (not examined by author).
*Gymnopus muticus:* Duméril, Bibron and Duméril, 1854:236. First use of combination.
*Amyda mutica:* Agassiz, 1857:399. First use of combination, but proposed earlier by Fitzinger (1835).
*Potamochelys? microcephalus* Gray, 1864:87. Type-locality, "Sarawak," restricted to "New Harmony, Indiana" (Schmidt, 1953). Holotype, British Museum (Nat. Hist.) 56.9.19.22, stuffed shell and skull (not examined by author).
*Callinia microcephala*: Gray, 1869:222. First use of combination.

• CONTENT. Two subspecies are recognized: *muticus* and *calvatus.*

• DEFINITION. This is the smallest American species, with the maximal size of females (carapace length near 36 cm) exceeding that of males (near 21 cm). Septal ridges are absent in the nose, and the carapace lacks a marginal ridge. The juvenile pattern on the carapace (young of both sexes and adult males) consists of either dusky dots and short streaks, or dusky spots (depending on subspecies); large females acquire a mottled, lichen-like pattern. The surface of the carapace in adult males is smooth (not gritty to touch). The anterior edge of the carapace is smooth, lacking tubercles. The limbs and neck are mostly patternless, having fine, non-contrasting markings. The only consistent feature of head pattern is a pale postocular stripe.

The skull is relatively fragile with the maxillaries thin and narrow distally. The greatest width of the skull is usually at the level of the squamosals. The ventral surface of the supraoccipital spine is broadest proximally, lacking a medial ridge. The opisthotic-exoccipital spur is absent, and the opisthotic wing is truncate. The lateral condyle of the articular surface of the quadrate is tapered posteriorly, and is smaller than the medial condyle. The angle of the epiplastron is obtuse, about 100 degrees, and the callosity of the epiplastron sometimes covers the entire surface. The seventh pair of costals is often separated by the medial series of neurals; the eighth pair of costals is small, or absent.

• DESCRIPTIONS. Webb (1962) provided detailed descriptions of external morphology, color pattern, and proportions, including individual, ontogenetic, sexual and geographic variation, and descriptions of skull, carapace and plastron; he also provided descriptions of both subspecies.

• ILLUSTRATIONS. Photographs of juveniles (including topotypes), adult males and females (including lectotype), habitat, and line drawings of dorsal surface of snout, side of head, hind foot, anterior edge of carapace, aspects of snout and skull, bony plastron, and suture variation in posterior part of bony carapace appear in Webb (1962). Photographs of an adult male and female, and colored photographic prints of a juvenile are in Conant (1958). A colored photograph of an adult female is in Barbour (1971). Photographs of a skull and an adult female (including side of head) are in Stejneger (1944). The skull of the holotype of *Potamochelys microcephalus* is figured in Gray (1873a). A good dorsal view drawing of a juvenile, an end view of the snout, and a drawing of an egg are in Agassiz (1857). A kyphotic individual is photographed by Smith (1947). Some other photographs of juveniles and adults are in regional guides and handbooks. All of the foregoing illustrations refer to *T. m. muticus.* The only illustrations pertaining to *T. m. calvatus* are photographs of the holotype and a hatchling male in the type description (Webb, 1959), dorsal views of a juvenile, adult male and female (Webb, 1962), and a live juvenile (Mehrtens, 1966).

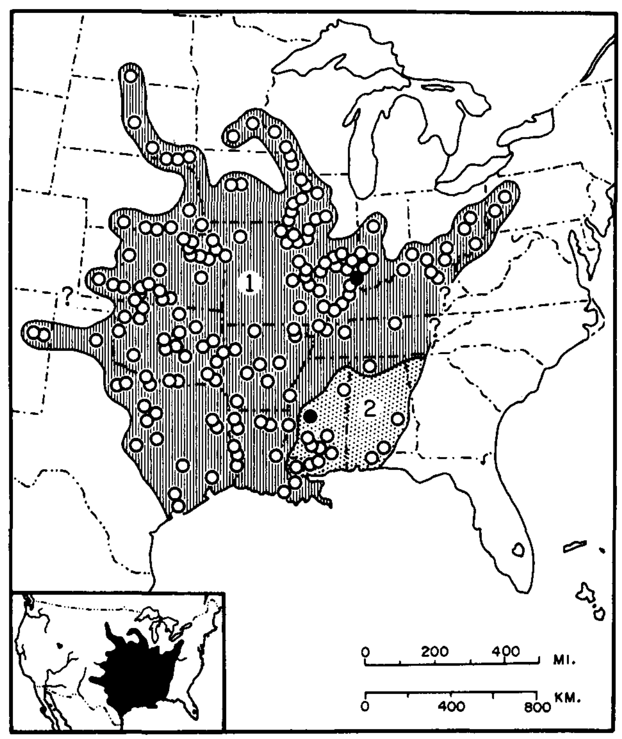
• DISTRIBUTION. *Trionyx muticus* occurs generally in the central United States, ranging from western Pennsylvania, southern Minnesota, and North Dakota, south to eastern New Mexico and central Texas, and eastward along the Gulf Coast to Alabama and the western end of the Florida panhandle. Records of occurrence depicted on the distribution map include those in Webb (1962) and only additional records that are peripheral and tend to delimit the geographic range of the species. Additional records include Mount and Folkerts (1968, Alabama), Mount (1969, Alabama), Brown (1967, Texas), Raun and Gehlbach (1972, Palo Pinto and Comanche counties, Texas), Fishbeck and Underhill (1959, South Dakota), Wheeler and Wheeler (1966, North Dakota), Corrado and McDuffie (1962, Ohio), J. M. Legler through Conant (*in litt.*, Cambria, Blue Earth County, Minnesota), and W. G. Degenhardt (*in litt.*, Quay County, New Mexico). The record from Thomas County, Nebraska (Webb, 1962) needs verification. There is an alleged record (no specimen) from the Cimarron River, Cimarron County, Oklahoma (Conant, *in litt.*).

The species is found in permanent waters of rivers, streams, lakes and impoundments.

• FOSSIL RECORD. None (Preston, 1966:235).

• PERTINENT LITERATURE. The most recent taxonomic treatment of *T. muticus* is by Webb (1962), who discusses relationships with other American species and summarizes life history information. Loveridge and Williams (1957) discuss *T. muticus* in dealing with trionychid species relationships. Additional papers not cited in Webb (1962) treat nesting habits (Vose, 1964; species perhaps *muticus*), eggs (Mount and Folkerts, 1968), penial morphology (Zug, 1966), choanal papillae (Parsons, 1968), cranial arteries and foramina (Albrecht, 1967), anatomy and other topics (Stockwell, 1888), cervical vertebrae (Williams, 1950), hypoxia (Dodge and Folk, 1963), ureogenesis (Baze and Horne, 1970), and karyotype analysis (Forbes, 1967).

• ETYMOLOGY. The name *muticus* (Latin) means maimed, cut off, or shortened, and refers to the absence of tubercles on the anterior edge of the carapace; *calvatus* (Latin) means made bare or bald, in allusion to the smooth anterior edge of the carapace.




MAP. Solid circles mark type-localities; open circles represent other localities; question marks signify uncertain distributional limits eastward in Kentucky and Tennessee, and an alleged record from western Oklahoma.

## 1. *Trionyx muticus muticus* Lesueur

*Trionyx muticus* Lesueur, 1827:263. See species account.
*Potamochelys? microcephalus* Gray, 1864:87. See species account.
*Trionyx muticus muticus:* Webb, 1959:520. First use of trinomial.

• DEFINITION. The carapacial pattern of the young and adult males consists mainly of dusky dots and usually a few short brown streaks on a tannish background; the markings may be scattered or close together. In females, the carapace has a dark and pale brown mottled or blotched pattern. There are short, pale snout stripes just in front of the eyes that do not extend to tip of snout. The pale postocular stripes lack thick black borders in adult males.

## 2. *Trionyx muticus calvatus* Webb

*Trionyx muticus calvatus* Webb, 1959:519. Type-locality, "Pearl River, Roses Bluff, 14 miles northeast Jackson, Rankin County, Mississippi." Holotype, hatchling, sex undetermined, Univ. Illinois Mus. Nat. Hist. 31071, obtained by William F. Childers on August 25, 1952 (examined by author).

• DEFINITION. The juvenile pattern on the carapace consists of large dusky, often ocellate, spots, lacking streaks. This pattern is present or absent in adult males, and changes to a dark and pale brown mottled and blotched pattern in females. Pale snout stripes in front of the eyes are lacking. The pale postocular stripes have thick black borders just behind the eyes in adult males.

• REMARKS. There are no specimens that indicate intergradation with *T. m. muticus*; a subspecific relationship is based on morphological similarity and allopatry.

### COMMENT

The lectotype designation and synonym (*Potamochelys microcephalus*) are discussed further by Webb (1962). Some additional data on the holotype of *P. microcephalus* is provided by Gray (1873b). *Trionyx muticus* was referred to the genus *Aspidonectes* by Wagler (1830) but no name-combination was employed. Stejneger (1944) presents a fairly complete synonymy for all name-combinations, including orthographic changes. *Trionyx muticus* Lesueur is the type-species of the subgenus *Euamyda*, proposed by Stejneger (1944), by monotypy (Webb, 1962).

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